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Manual Update

The following changes apply to the manuals listed below:

- Agilent E1420B User's Manual (part number E1420-90027)
- Agilent E1420B Assembly-Level Service Manual (part number E1420-90026)

The changes contained in this Manual Update apply to all serial numbers.

❒ **Change 1:** *On Page A-1 (User's Manual) and Page 1-3 (Service Manual), add the following new information under* **TIME INTERVAL DELAY 1→2**.

Delay Range (Option 100): 1 ms to 1 second

❒ **Change 2:** *On Page A-2 (User's Manual) and Page 1-4 (Service Manual), replace the existing specification information with the modified text below.*

MINIMUM, MAXIMUM AC, DC VOLTAGES 1,2

Frequency Range: dc (Input 1 only), 1 kHz to 20 MHz
Dynamic Range:
dc signals: ±10 V (x Attn)
ac signals: 200 mV (x Attn) pk-pk to 5V (x Attn) pk-pk
Resolution:
Min, Max, AC/DC: 30 mV (x Attn)
Accuracy:
Min, Max: AC ±50 mV (x Attn) ±5% of pk-pk voltage
(± 10% if x 10 mode)
DC: ±50 mV (x Attn) ±5% of pk-pk voltage
(±10% if x 10 mode)

SENSITIVITY 1,2 (MAX)

35 mV (x Attn) rms sine wave
100 mV (x Attn) pk-pk at a minimum pulse width of 5 ns

1 MΩ:
Dynamic Range (ac) ..... 5V (x Attn) peak to peak
Signal Operating Range (dc) ..... ±10 Volts (x Attn)

50Ω:
Dynamic Range (ac) ..... 5V peak to peak
Signal Operating Range (dc) ..... ±5 Volts
AC + DC not to exceed 5 Vrms

❒ **Change 3:** *On Page A-2 (User's Manual) and Page 1-3 (Service Manual), replace the existing information under* **RISE/FALL TIME 1** *with the modified text below.*

Range: (10 s max with 100 gate Average):
x 1 Mode: 15 ns to 400 µs (auto trigger) or 800 seconds (manual trigger)
x 10 Mode: 75 ns to 400 µs (auto trigger) or 800 seconds (manual trigger)

❒ **Change 4:** *On Page A-3 (User's Manual) and Page 1-5 (Service Manual), replace the existing information under* **EXTERNAL ARM** *with the modified text below.*

EXTERNAL ARM:
Front panel ARM input or VXIbus TTL TRIG lines can be used to determine Start and/or Stop point of a measurement. External Arm can be used with all measurements. Totalize is an exception if the firmware is older than revision 3401.

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❒ **Change 5:** *On Page A-3 (User's Manual) and Page 1-4 (Service Manual), replace the existing specification information with the modified text below.*

HYSTERESIS 1,2 (@ 1 MHz)

Adjustable to:
MINimum (35 mV rms)
MAXimum (100 mV rms)
DEFault (60 mV rms)

❒ **Change 6:** *In the first paragraph on Page C-4 (User's Manual) and Page 2-4 (Service Manual), the Performance Test software is no longer available on floppy disk. However, you can download the software from the Agilent web site at* www.agilent.com *(search for "E1420B").*

❒ **Change 7:** *On Page C-32 (User's Manual) and Page 2-30 (Service Manual), delete Step 7 from the procedure. After completing Step 6, proceed directly to Step 8.*

❒ **Change 8:** *Below Step 14 on Page C-34 (User's Manual), add the following text.*

Description of Command		SCPI Command String
Measure Frequency:	Input 3	`"MEAS3:FREQ? 1.5E9,DEF"`

Verify: The E1420B measures a frequency of 1.500 000 000 GHz ± 20 Hz.

❒ **Change 9:** *In Step 14 on Page 2-32 (Service Manual), change the frequency tolerance from* ± **2 Hz** to ± **20 Hz**.

❒ **Change 10:** *In Paragraph 3-8 on Page 3-4 (Service Manual), the correct response for firmware 3401 shown in Step 3 should be:*

PASSED OFFSET CH1 , PASSED OFFSET CH2

❒ **Change 11:** *In Paragraph 3-9 on Page 3-4 (Service Manual), the correct response for firmware 3401 shown in Step 3 should be:*

PASSED FULLSCALE CH1 , PASSED FULLSCALE CH2

❒ **Change 12:** *In Paragraph 3-9 on Page 3-4 (Service Manual), the +5V power source should be accurate to* **1 milliVolt**.

❒ **Change 13:** *In Paragraph 3-10 on Page 3-4 (Service Manual), the range of acceptable MRC bias voltages in Step 2 is from* **+3.000 VDC** *to* **+3.150 VDC**. *If your unit falls within this range, you should not change it. If it is outside this range, set it to* **+3.150 VDC**.

❒ **Change 14:** *On Page 3-6 (Service Manual), change Step 16 to read as follows:*

Repeat procedure steps 1 through 15 above until both inputs 1 and 2 on the E1420B return stable measurements at both input frequencies and both trigger slopes. If proper lock cannot be obtained at 28 mV, increase the signal level to 40 mV and set the adjustment pots halfway between the optimum settings for 70 and 104 MHz. Reduce the signal level several dB and repeat until the unit locks with a signal level of 35 mV or less. A typical unit will reach 28 mV. If the unit will not lock at 35 mV, then the input assembly may be defective.

❒ **Change 15:** On Page 3-9 (Service Manual), Step 5, change "tiomebase" to "timebase".

❒ **Change 16:** *On Pages 4-11 and 4-12 (Service Manual), the correct response for Step 3 (on both pages) should be:*

```
HEWLETT-PACKARD,E1420B,0,3401
```

If the response indicates an older version, such as B.00 or C.00, upgrading the firmware to 3401 is strongly recommended.

❒ **Change 17:** *On Page 5-7 (Service Manual), make the following changes to Table 5-2.*

Add: A1U31, E1420-80040, MRC for Standard units
Add: A1U31, E1420-80100, MRC for Option 100 units

The existing A1 part numbers are for standard units. The following part numbers apply to units with Option 100.

A1 E1420-60120, New E1420B Option 100 motherboard
A1 E1420-69120, Exchange E1420B Option 100 motherboard

A1 E1420-60121, New E1420B Option 010 and 100 motherboard
A1 E1420-69121, Exchange E1420B Option 010 and 100 motherboard

If the motherboard for a unit with Option 040 should require replacement, the Option 040 ROMs (A1U12 and A1U13) should be taken from the old motherboard and placed in the sockets of the new motherboard.



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